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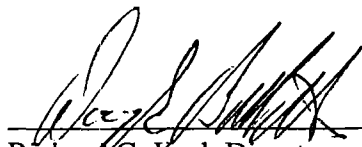
SECOND FIVE YEAR REVIEW REPORT

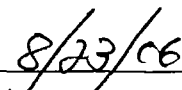
J & L LANDFILL SUPERFUND SITE

**ROCHESTER HILLS,
MICHIGAN**

Pursuant to CERCLA

**Prepared by:
United States Environmental Protection Agency
Region 5
Chicago, Illinois**


for Richard C. Karl, Director
Superfund Division, Region 5


Date 8/23/06

**SECOND FIVE YEAR REVIEW REPORT
EXECUTIVE SUMMARY
AUGUST, 2006**

J & L LANDFILL SUPERFUND SITE

**ROCHESTER HILLS,
MICHIGAN**

The completion of the current five year review confirms that the J&L Landfill Superfund Site remains protective of human health and the environment, and there are no known exposure pathways that result in unacceptable health risks. The components of the remedy selected in the 1994 J&L Landfill Site ROD for the landfill operable unit and 1997 J&L Landfill Site ROD for the groundwater operable unit have been implemented under the 1995 Unilateral Administrative Order and 1998 Unilateral Administrative Order. LTV Steel Corporation no longer has a working relationship at the J&L Landfill Superfund Site due to a 2003 bankruptcy agreement. USEPA was provided a cash settlement by the bankruptcy court, and initiated a cooperative agreement with MDEQ for operation and maintenance work through 2010.

The soil/liner/clay landfill cap prevents surface water infiltration and subsequent contaminant migration off-site. Restrictions for Site access, use of the landfill, and use of Site groundwater remain in place through the Declaration of Restrictive Use of Real Property. Closure and post closure maintenance and monitoring of the Site landfill and groundwater is currently providing adequate protection of human health and the environment. A public water supply main extension and survey along Dequindre Road was completed in 2002, based on concern of the local groundwater quality, due to nine landfills identified in the area of a one-half mile radius surrounding the J&L Landfill Site. Ambient air monitoring completed at 6 locations along the Site fence line and Landfill gas monitoring conducted through 2003 also determined that protectiveness was in place for nearby residents. Sandfill Landfill No. 1, the Kingston Landfill and the Six-Star Landfill bordering the J&L Landfill Site to the west and upgradient remain a concern for potential sources of benzene and methane.

This is the second five year review for the J & L Landfill Site. The first five year review was completed and signed in September 2001. The operation and maintenance program initiated in 1998 and recently transferred through a cooperative agreement with MDEQ provides an adequate summary of the sampling data for the Site. The ongoing Site sampling program as well as concerns regarding the other landfills surrounding the J&L Landfill Site will be discussed with MDEQ during the upcoming five year review period, scheduled to be completed in 2011.

Five Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): J & L Landfill

EPA ID (from WasteLAN): MID980609440

Region: 5

State: MI

City/County: Rochester Hills, Oakland

SITE STATUS

NPL status: ☒ Final ☐ Deleted ☐ Other (specify) _____

Remediation status (choose all that apply): ☐ Under Construction ☒ Operating ☐ Complete

Multiple OUs?* ☐ YES ☒ NO Construction completion date: 9/30/97

Has site been put into reuse? ☐ YES ☒ NO

REVIEW STATUS

Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____

Author name: Jeff Gore

Author title: Remedial Project Manager

Author affiliation: U.S. EPA, Region 5

Review period:** 12/19/05 to August, 2006

Date(s) of site inspection: May 17, 2006

Type of review:

☒ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only
☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead
☐ Regional Discretion

Review number: ☐ 1 (first) ☒ 2 (second) ☐ 3 (third) ☐ Other (specify) _____

Triggering action:

☐ Actual RA Onsite Construction at OU # _____ ☐ Actual RA Start at OU# 1
☐ Construction Completion ☒ Previous Five-Year Review Report
☐ Other (specify) _____

Triggering action date (from WasteLAN): 9/10/2001

Due date (five years after triggering action date): 9/10/2006

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

**U.S. Environmental Protection Agency
Region 5
Second Five Year Review
J & L Landfill Superfund Site
Rochester Hills, Michigan
August 2006**

I. Introduction

The United States Environmental Protection Agency (U.S. EPA) Region 5 has conducted a five year review of the remedial actions implemented at the J & L Landfill Superfund Site in Rochester Hills, Michigan. The review was conducted between December 2005 and August 2006. This report documents the results of the five year review. The purpose of five year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of the review are documented in the five year review reports. In addition, five year review reports identify issues found during the review, if any, and make recommendations to address them.

This review is required by statute. U.S. EPA performs statutory reviews on remedies selected that result in hazardous substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure.

The NCP part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

If a remedial action is selected that results in hazardous substances, pollutants, or *contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure*, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the second five year review for the J & L Landfill Superfund Site. The first five year review was completed on September 10, 2001. The date for the current five year review is triggered by the completion of the September 2001 review. Both reviews are based on the initiation of the remedial action response date for the Site which was May 1996.

II. Site Chronology

Table 1 lists the chronology of events for the J & L Landfill Superfund Site.

Table 1: Chronology of Site Events

Date	Event
1983	Initial discovery of problem
1984	Preliminary Site assessment & inspection
1986	Proposed for NPL listing
1989	NPL final listing
1989	RI/FSs initiated for both Site operable units
1997	RI/FSs completed for both Site operable units
1994	ROD signed for landfill
1995	UAO issued for landfill
1996	Remedial Action start
1997	ROD signed for groundwater
1997	Remedy construction completion
1998	UAO issued for groundwater
2001	First Five Year Review
2002	Water main extension & well abandonment
2006	Second Five year Review

III. Background

A. Physical Characteristics

The J&L Landfill Superfund Site is approximately 17 acres in size and is located near the intersection of Hamlin and Dequindre Roads in Rochester Hills, Michigan (See figure). A number of landfills are located within a one-half mile radius of the Site. Residential homes exist just south of the Site along Hamlin Road. Other homes are located to the northwest and east of the Site.

B. Land and Resource Use

The J & L Landfill Site is bordered on the west by the Sandfill Landfill No. 1, the Kingston

Landfill and the Six-Star Landfill; to the east by Sandfill Landfill No. 2 and the Sportsman Club Landfill; further east are the Hamlin Road Landfill and the Malo Tree Landfill; and to the north are the Mal Enterprises Landfill and the SOCRRRA Landfills. Ladd Drain runs just north of the Site and flows into the Clinton River, located less than one mile to the east. All Site surface drainage leads to Ladd Drain, with area surface water and groundwater flowing east toward the Clinton River.

C. History of Contamination

The J&L Site was used for sand and gravel mining prior to becoming a landfill. Disposal of steel slag and steel manufacturing wastes began as early as 1951. J&L Steel, before merging with LTV Steel, purchased the Site in 1957 from the Rotary Electric Steel Company and became the land owner. In 1968, electric arc furnace (EAF) dust collected from steel manufacturing baghouse filters began to be deposited at J&L Landfill. Wastes continued to be deposited at the Site until 1980 when the landfill was closed and capped.

D. Initial Response

The Michigan Department of Natural Resources (MDNR) conducted an area groundwater study in 1976 and identified local groundwater contamination attributed primarily to another landfill west of the J&L Landfill. As a result, local residents were provided with an alternative drinking water supply. The Michigan study also determined that a number of surrounding landfill sources possibly contributed to the area groundwater contamination. U.S. EPA contractor Ecology and Environment, Inc. (E&E) completed a Preliminary Site Assessment in 1983, a Site Inspection in 1984 and Field Investigation in 1985.

E. Basis for Taking Action

J&L Landfill was proposed for inclusion to the National Priorities List (NPL) on June 10, 1986. The Site became a final NPL listing on March 31, 1989. U.S. EPA completed a remedial investigation (RI) through a contractor in 1991. The report included results stating that approximately 455,000 cubic yards of material were deposited in the landfill, with a large portion of the waste being steel manufacturing slag and EAF dust. The landfill cap was not being maintained, showed signs of erosion and was not adequate. Both the upper and lower portions of the shallow aquifer around the Site were contaminated with volatiles, semivolatiles, pesticides and inorganics. Groundwater entering the J&L Landfill Site already contained these contaminants, indicating upgradient sources. Soil sampling results showed elevated levels of inorganics in surface soils at the southwest and northeast areas of the landfill, indicating the probable presence of steel slag material in the cap. Low levels of volatiles and semivolatiles were present in samples from the sideslopes of the east ditch, a sediment pond and Ladd Drain.

Based on the results of the RI and previous investigations, U.S. EPA divided the Site into a Landfill Operable Unit (OU) and a Groundwater OU.

A Feasibility Study (FS) for the Landfill OU was completed in January 1994. The ROD for the Landfill OU was also signed June 30, 1994. A FS was completed to address the Groundwater OU in August 1997. The Groundwater FS included additional information from groundwater sampling which took place in 1996. The ROD for the Groundwater OU was signed September 30, 1997.

IV. Remedial Actions

A. Remedy Selection

The response actions outlined in the 1994 Landfill OU ROD for the J&L Superfund Site included the following components:

- A multi-layer soil/liner/clay cap with passive gas management system.
- Consolidation of any contaminated surface soils and sediments into the landfill beneath the cap.
- Regrading the Site to promote proper surface water runoff, vegetation and management.
- A perimeter fence to restrict access.
- Institutional controls including deed restrictions on and near the Site to limit land and groundwater use.
- Upgraded groundwater monitoring and a monitoring plan for landfill components.

The response actions outlined in the 1997 Groundwater OU ROD for the J&L Landfill Site included the following components:

- Expanded groundwater monitoring program for the Site.
- Updated institutional controls and deed restriction to restrict groundwater use.

B. Remedy Implementation

Negotiations for the remedial design/remedial action (RD/RA) with the PRPs were initiated but no settlement was reached. On June 27, 1995 a Unilateral Administrative Order (UAO) pursuant to 106 of CERCLA was issued to LTV Steel to perform the RD/RA for the Landfill OU and take

additional samples for the Groundwater OU.

Construction in accordance to the Landfill OU remedy began in the summer of 1996 and was completed in the fall of 1997. The multi-layer cap was constructed to cover all landfill waste and the east ditch. The remedy produced four monitoring systems: Passive gas collection and venting; a gas migration monitoring well; surface water infiltration monitors; and groundwater monitoring wells. The sediment pond was also backfilled with clean fill, culverts were sealed to avoid leachate migration, and the security chainlink fence was installed.

U.S. EPA issued a second UAO pursuant to 106 of CERCLA to LTV Steel on June 5, 1998. This UAO directed LTV Steel to perform a remedial design and to further implement any appropriate remedial action for the Groundwater OU.

C. Systems Operations/ Operations and Maintenance

Groundwater and surface water remedial objectives at the J&L Landfill Superfund Site are the attainment of U.S. EPA primary and secondary drinking water maximum contaminant levels (MCLs), and the elimination of any excess lifetime cancer risks according to Michigan Residential Drinking Water Criteria. Soil remedial objectives include the elimination of any excess direct contact, ingestion, inhalation and groundwater leachate human health risks by containment of contaminated soils.

The J&L Landfill Site monitoring program was approved and initiated in the summer of 1998. The sampling program included sampling of 10 groundwater monitoring wells. An Alternative Water Supply Plan was submitted in 1999 addressing the possibility of providing public water to any residences with private water wells near the Site, to eliminate any potential groundwater risk from the local aquifer. Local resident surveys were completed in 1999, 2000 and 2001 to assess the need for public water. A public water supply main extension was completed in 2002.

The operation and maintenance monitoring program initiated in 1998 at the Site provides information on whether contaminant concentrations in groundwater and surface water continue to be within acceptable human health and environmental standards. The construction of the soil/liner/clay cap minimizes the amount of infiltration through the landfill contents, which controls the risk of contamination migrating into the shallow aquifer and off-site. Groundwater monitoring wells and surface water infiltration monitoring lysimeters provide data, to assure that the landfill is properly containing the Site waste and providing a surface barrier. Long-term maintenance of the cap is required to ensure that the remedy remains effective, and ensures containment of Site waste material.

V. Progress Since Last Five Year Review

This is the second five year review for the J & L landfill Site. The first five year review report

was completed and signed in September 2001. Recommendations during the 2001 review included the following:

The items of concern noted from the site visit in April 2001 were to be addressed in the future. These items include erosion by the MW-02 monitoring well nest, monitoring standing water that forms after rain events on the east side slope and ditch, the rusting of monitoring well case MW-6S, and the ineffective surface water infiltration lysimeter L-5. The prairie grasses should be maintained to promote their continued expansion and dominance of the landfill cover, and gravel should be extended around the perimeter of the landfill cap.

Based on these recommendations, the private party contractor proceeded to fill in the erosion area near the MW-02 well nest, promoted the growth of the prairie grasses on the landfill cover, and extended gravel cover around the perimeter of the landfill cap.

As a result of the public water supply survey completed in 2001, a water supply main extension along Dequindre Road was completed in 2002. This allowed for public water to be provided to a few buildings in the immediate area of the J&L Landfill Site. Private wells were also abandoned after public water was supplied to the locations.

LTV Steel, the only PRP at the J&L Landfill Site, completed bankruptcy court procedures in August 2003, and is no longer involved with the J&L Landfill Site operation and maintenance program. Based on the bankruptcy, U.S. EPA received a cash settlement from the bankruptcy court to continue work on the Site operation and maintenance (O&M) program. Since the contractor who was hired by LTV Steel to perform O&M at J&L Landfill was no longer involved, U.S. EPA needed to perform the O&M work independently. U.S. EPA then completed a cooperative agreement with Michigan DEQ through 2010 to facilitate Site groundwater sampling and analysis, landfill cap maintenance, and data compilation and reporting. As a result, Michigan DEQ is currently performing the Site sampling, maintenance, analysis and reporting activities under the direction and review of U.S. EPA.

VI. Five Year Review Process

A. Administrative Components

The J&L Landfill Site five year review was prepared by Jeff Gore, U.S. EPA Remedial Project Manager for the Site. Sunny Krajcovic, State Project Manager with the Michigan Department of Environmental Quality (MDEQ), also assisted with the review. The five year review consisted of a Site inspection and review of relevant documents.

B. Community Involvement

The completed report will be available in the Site information repository and the U.S. EPA

website for public view. An advertisement notice regarding the five year review process was placed in the Rochester Eccentric newspaper on April 13, 2006 for public viewing.

Community relations ongoing at the J&L Landfill Site include the comprehensive sampling program currently being carried out to assure that human health and the environment are protected, and contaminants are contained on the Site. As a result of the public water supply survey completed in 2001, a water supply main extension along Dequindre Road was completed which allowed for public water to be provided to a few buildings in the immediate area of the J&L Landfill Site. The sampling, analysis and maintenance program is currently being done by MDEQ through a cooperative agreement with USEPA.

C. Document Review

Documents reviewed in preparation of this five year review report include the following:

- 1) Five Year Review Report, J&L Landfill Site, September 2001
- 2) Unilateral Administrative Order, J&L Landfill Site, June 1998
- 3) Record of Decision, J&L Landfill Site, September 1997
- 4) Unilateral Administrative Order, J&L Landfill Site, June 1995
- 5) Record of Decision, J&L Landfill Site, September 1994
- 6) J&L Landfill Site file, and operation & maintenance documents.

The following standards were identified as applicable or relevant and appropriate requirements (ARARs) in the 1994 ROD, 1997 ROD or 2001 five year review for the J&L landfill Site, and were updated for any changes that involve protectiveness:

- Safe Drinking Water Act Maximum Contaminant Levels (MCLs);
- Resource Conservation and Recovery Act (RCRA) hazardous and solid waste disposing and storage regulations;
- Safe Drinking Water Act (SDWA)
- Clean Air Act
- Occupational Safety and Health Act
- State of Michigan requirements for soil, groundwater, surface water and air compliance

including the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201).

D. Data Review

The operation and maintenance monitoring program initiated in 1998 at the Site provides information on potential contaminant concentrations in groundwater and surface water, in order to be within acceptable human health and environmental standards. Ambient air monitoring was completed and discontinued in 2002 at 6 locations along the Site fence line, when it determined that air quality for nearby residents was not at risk. Landfill gas monitoring has been conducted through 2003, and also determined that protectiveness was in place for nearby residents. Groundwater monitoring wells and surface water infiltration monitoring lysimeters provide ongoing data, to assure that the landfill is properly containing the Site waste and providing a surface barrier. Long-term maintenance of the cap is required to ensure that the remedy remains effective, and ensures containment of Site waste material.

Recent J&L Landfill Site monitoring has shown that drinking water standards for volatile organic compounds (VOCs) and semi-volatiles (SVOCs) are being met in groundwater sample results, with the exception of benzene at 10 ug/l at upgradient well GW07S. Benzene has historically shown a slight exceedence in this upgradient shallow monitoring well, which has been attributed to some source off-site. Data from 2003 results at MW03S (which is screened in refuse) showed low level detections of acetone, benzene, 1,4 dichlorobenzene, carbon disulfide, toluene, vinyl chloride and xylenes. A number of groundwater samples regularly exceed Michigan drinking water criteria for inorganics. Data from 2003 monitoring well results listed aluminum, iron, manganese, sodium, lead and nickel as exceeding Michigan criteria. MDEQ would also like to include the analysis of methane in the groundwater.

The water supply main extension along Dequindre Road completed in 2002 was based on concern of the local groundwater quality, due to nine landfills identified in the area of a one-half mile radius surrounding the J&L Landfill Site. The addition of this public water supply for these buildings near the Site eliminate any concern of unacceptable long-term risk in groundwater contamination for people in the immediate area. Local surveys have determined that all other homes adjacent to the Site already have public water. MDEQ would like to verify that the abandoned private wells are not in use by a future inspection. This public water supply extension fulfilled remedial objectives of the 1997 Site ROD.

E. Site Inspection

The J&L Landfill Site has been visited periodically by the current remedial project manager since the last five year review. The most recent visit was performed on May 17, 2006, in order to inspect the Site for this five year review. Jeff Gore of U.S. EPA was present during the May inspection. Sunny Krajcovic, MDEQ project manager, had recently visited the Site for operation

and maintenance sampling. The five year review site inspection checklist was used as a guideline for the J&L Landfill Site inspection.

A walk was taken around the surface of the landfill, as well as areas along the fence line and outside the property boundary of the Site. Site access is available through locked gates at both the north and south sides of the landfill property.

The Site was found to be in good condition during the inspection with minimal wood debris by lysimeter L1, and the prairie grass providing a proper cover. There were no signs of excessive erosion along the landfill cap, although an animal burrow hole was seen near monitoring well MW01S. The Site showed no signs of any vandalism or other disturbances. The access fence was properly in place with both gates locked, although two monitoring wells locks were unable to be closed. Gravel cover was sufficient along the driveway entrance and around the perimeter of the landfill. Some standing water existed near the fence line at lysimeter L5, MW01S, MW07S and MW07D, as it looked as if it had rained recently and was draining slowly.

The issues found during the five-year review inspection were mostly minor and included:

- 1) Bent casing at MW03S and/or MW03D could make it difficult for MDEQ to take water level measurements. MW03S measurements were taken in 2003 by the private party contractor.
- 2) An animal burrow hole was seen near monitoring well MW01S
- 3) The monitoring well case top for GW06S had extensive rust.
- 4) A post for GW06D was uprooted.
- 5) Unable to close locks for monitoring wells MW03D and GW02D.

VII. Assessment

The following questions address the protection of human health and the environment of the remedy at the J&L Landfill Superfund Site.

Question A: Is the remedy functioning as intended by the decision documents? Yes.

- **Implementation of Institutional Controls and Other Measures:** The 1994 ROD and 1997 ROD included institutional controls implementing a Declaration of Restrictions on Use of Real Property preventing development of land within the Site boundary, preventing use of groundwater underlying the Site, and assuring the integrity of the landfill and other components of the remedial action (See Site figure). Site access and use is restricted with a security perimeter fence. The

installation of groundwater wells on the Site property is also restricted, other than that required for implementation of the remedial action. These controls and restrictions are best efforts, and are to remain in place to prevent property access and property groundwater use in relation to the remedial action. A public water supply main extension along Dequindre Road was also completed in 2002 based on concern of the local groundwater quality, due to nine landfills identified in the area of a one-half mile radius surrounding the J&L Landfill Site

- **Remedial Action Performance:** The remedy selected in the 1994 and 1997 RODs has been implemented and remains functional, operational and effective. With continued maintenance and monitoring of the Site hazardous waste cap and groundwater system, the remedy should contain any contained soil contamination and ensure that no surface water contamination or groundwater plume develop. The soil/liner/clay landfill cap and Site security fence insure that source area contamination is contained, and a permanent barrier exists to prevent human contact. Although no downgradient Site groundwater plume exists, benzene has historically shown a slight exceedence of the MCL in the upgradient shallow monitoring well GW07S, which has been attributed to some source off-site. The public water supply survey and water supply main extension along Dequindre Road completed in 2002, provides an extra measure of safety for human health. Ambient air monitoring completed in 2002 at 6 locations along the Site fence line, and Landfill gas monitoring conducted through 2003 also determined that protectiveness was in place for nearby residents.
- **System Operations/O&M:** The Site hazardous waste cap and groundwater monitoring network at the J&L Landfill Site are maintained and monitored. Groundwater and landfill sampling, as well as landfill cap maintenance continue to assure that the system is operating properly and the remedy remains operational and functional. The 2002 public water supply main extension along Dequindre Road remain in place. The operation and maintenance contractor previously utilized in operation and maintenance sampling and reporting program at J&L Landfill was discontinued in 2004 due to the bankruptcy of LTV Steel. A cooperative agreement with Michigan DEQ was prepared in 2004, so MDEQ could perform Site O&M sampling, analysis and reporting under the direction of USEPA.
- **Cost of System Operations/O&M:** Current annual O&M costs at the J&L Landfill Site are primarily attributable to operation, maintenance and management of the Site landfill, and groundwater monitoring systems. 2006 Site estimated annual costs are approximately \$25,000. The cooperative agreement with MDEQ has a budget of \$75,000 through 2010.
- **Opportunities for Optimization:** Data from 2003 results at MW03S (which is

screened in refuse) showed low level detections of acetone, benzene, 1,4 dichlorobenzene, carbon disulfide, toluene, vinyl chloride and xylenes. A number of groundwater samples regularly exceed Michigan drinking water criteria for inorganics. Data from 2003 monitoring well results listed aluminum, iron, manganese, sodium, lead and nickel as exceeding Michigan criteria. These results provide additional data to consider. The cooperative agreement with MDEQ will be evaluated in 2010 to consider any changes that should be made.

- **Early Indicators of Potential Remedy Issues:** The bankrupt LTV Steel Corporation no longer has a working relationship at the J&L Landfill Superfund Site. USEPA was provided a cash settlement by the bankruptcy court, but the available funds are limited, and are to be utilized for the remainder of the operation and maintenance program at the J&L Landfill Site.

Question B: Are the assumptions used at the time of remedy selection still valid? Yes.

- **Changes in Standards and To Be Considered:** Standards outlined and updated in the 1994 ROD, 1997 ROD, and 2001 Five Year Review Report are still valid at the J&L Landfill Site.
- **Changes in Exposure Pathways:** No new exposure pathways have been discovered at the J&L Landfill Site since the last five year review in 2001. The public water supply survey and water supply main extension completed in 2002 along Dequindre Road, provides an extra measure of safety for human health.
- **Changes in Toxicity and Other Contaminant Characteristics:** Toxicity and other factors for contaminants of concern have not changed at the Site since the last five year review in 2001.
- **Changes in Risk Assessment Methodologies:** Risk assessment methodologies used at the J&L Landfill Site since the last five year review in 2001 have not changed, and do not call into question the protectiveness of the remedy.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy? No.

No other information has come available that could question the remedy at J&L Landfill. The Site remedy remains protective of human health and the environment.

VIII. Issues

The following issues were identified during the five year review process and the J&L Landfill Site inspection, and do not impact the protectiveness of the remedy..

- 1) Bent casing at MW03S and/or MW03D could make it difficult for MDEQ to take water level measurements. MW03S measurements were taken in 2003 by the private party contractor.
- 2) An animal burrow hole was seen near monitoring well MW01S
- 3) The monitoring well case top for GW06S had extensive rust.
- 4) A post for GW06D was uprooted.
- 5) Unable to close locks for monitoring wells MW03D and GW02D.

Table 2: Identified Issues that Impact Protectiveness

Five Year Review Issues that Impact Protectiveness	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
None		

IX. Recommendations and Follow-up Actions

The following recommendations and follow-up actions address the issues which were identified during the five year review and Site inspection, and do not impact the protectiveness of the remedy:

- 1) Discuss history of water level measurement of potential bent casing monitoring well, and methane monitoring.
- 2) Fill in animal excavation burrow area.
- 3) Monitor rusting case top of GW06S and replace if needed
- 4) Replace uprooted GW06D post.
- 5) Replace locks for MW03D and GW02D as needed.

Table 3 : Recommendations and Follow-up Actions for Issues that Impact Protectiveness

Five Year Review Issues that Impact Protectiveness	Recommendations Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protective ness (Y/N) Current, Future
None					

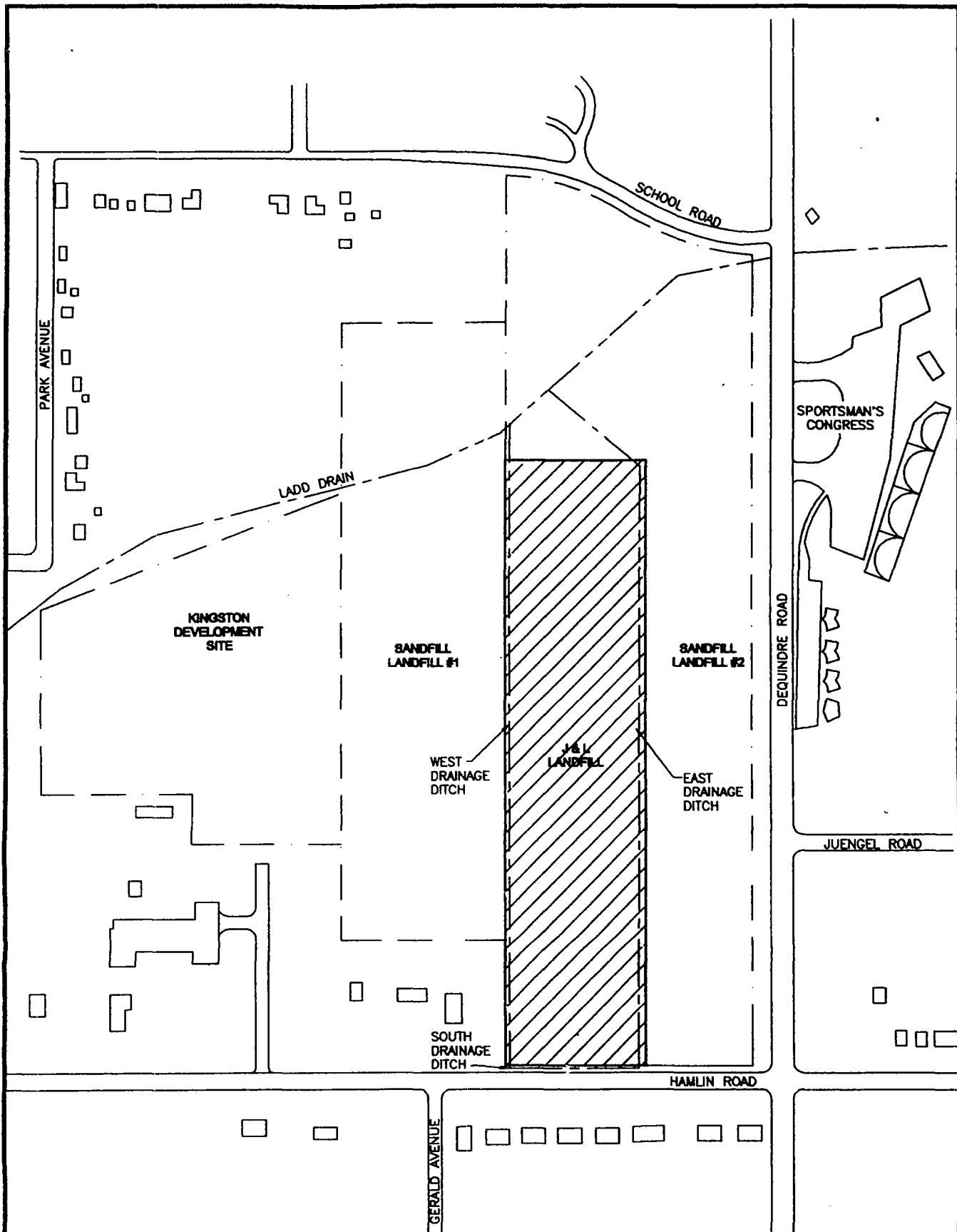
X. Protectiveness Statements

Completion of the current five year review confirms that the J&L Landfill Superfund Site remains protective of human health and the environment, and there are no known exposure pathways that result in unacceptable health risks. The components of the remedy selected in the 1994 J&L Landfill Site ROD and 1997 J&L Landfill Site ROD have been implemented under the 1995 Unilateral Administrative Order and 1998 Unilateral Administrative Order. LTV Steel Corporation no longer has a working relationship at the J&L Landfill Superfund Site due to a 2003 bankruptcy agreement. USEPA was provided a cash settlement by the bankruptcy court, and initiated a cooperative agreement with MDEQ for operation and maintenance work through 2010.

The soil/liner/clay landfill cap prevents surface water infiltration and subsequent contaminant migration off-site. Restrictions for Site access, use of the landfill, and use of Site groundwater remain in place through the Declaration of Restrictive Use of Real Property. Closure and post closure maintenance and monitoring of the Site landfill and groundwater is currently providing adequate protection of human health and the environment. A public water supply main extension and survey along Dequindre Road was completed in 2002, based on concern of the local groundwater quality, due to nine landfills identified in the area of a one-half mile radius surrounding the J&L Landfill Site. Ambient air monitoring completed at 6 locations along the Site fence line and Landfill gas monitoring conducted through 2003 also determined that protectiveness was in place for nearby residents. Sandfill Landfill No. 1, the Kingston Landfill and the Six-Star Landfill bordering the J&L Landfill Site to the west and upgradient remain a concern for potential sources of benzene and methane.

XI. Next Review

U.S. EPA performs statutory reviews on remedies selected that result in hazardous substances, pollutants or contaminants remaining at sites above levels that allow for unlimited use and unrestricted exposure. Since hazardous substances, pollutants or contaminants will potentially remain above U.S. EPA and/or State of Michigan regulatory standards in the future since the Site is a landfill, the J&L Landfill Site will require ongoing Five-Year Reviews. Therefore, another report is scheduled to be completed five years after the current five year review. The completion date of the current five year review is the signature date shown on the cover attached to the front of this report.



REFERENCE:
BASE PLAN FROM RI-USEPA CONTRACT
NO. 68-W8-0089-FIGURE 1-2., (1991)



SITE AND VICINITY MAP J & L LANDFILL ROCHESTER HILLS, MICHIGAN				
DESIGN:	TC	CHECK:	CITY	PROJECT NO.
DRAWN:	ZAL	DATE:	9/27/00	M54E07017A01
				FIG. NO.
				1-2

**FIVE YEAR REVIEW REPORT
LIST OF DOCUMENTS REVIEWED
AUGUST, 2006**

J & L LANDFILL SUPERFUND SITE

**ROCHESTER HILLS,
MICHIGAN**

- 1) Landfill Record of Decision, J & L Landfill Site, June 1994
- 2) Landfill Unilateral Administrative Order, J & L Landfill Site, June 1995
- 3) Groundwater Record of Decision , J & L Landfill Site, September 1997
- 4) Groundwater Unilateral Administrative Order, J & L Landfill Site, June 1998
- 4) Five Year Review, J & L Landfill Site, September 2001
- 5) J & L Landfill Site file, and operation & maintenance documents.

15839-100

15839-232993

COPYDECLARATION OF RESTRICTIONS ON USE OF REAL PROPERTY

LTV Steel Company, Inc., record owner in fee simple of the real property described below, hereby declares and imposes the following restrictions on the use of real property located in the County of Oakland, Avon Township, on Hamlin road, near the intersection of Hamlin and Dequindre roads, said real property lying north of Hamlin road and west of Dequindre and containing approximately 16.7292 acres of land, viz:

Plot A: a part of the Southeast 1/4 of Section 24, Township 3 North, Range 11 East, Avon Township, Oakland County, Michigan, more particularly described as follows:

Rock Hills
Beginning at a point in the West line of the East 50 acres of said Southeast 1/4 of Section 24, being South 87 degrees 55 minutes West 810.30 feet and North 2 degrees 32 minutes 40 seconds West 1075.15 feet from the Southeast corner of said Section 24 and thence extending North 2 degrees 32 minutes 40 seconds West 723.50 feet along the West line; thence North 87 degrees 55 minutes East 405.15 feet; thence South 2 degrees 32 minutes 40 seconds East 723.50 feet; and thence South 87 degrees 55 minutes West 405.14 feet to the point of beginning, containing 6.7292 acres of land.

Plot B: the South 10 acres of the West 25 acres of the East 50 acres of the Southeast 1/4 of Section 24, Township 3 North, Range 11 East.

All of which real estate is hereinafter referred to as the

"Property."

RECITALS

WHEREAS, the United States Environmental Protection Agency ("U.S. EPA") has issued a Record of Decision adopting a remedial action plan which requires remedial action to be undertaken on the Property and further institutional controls to

O.K. - J.S.

15-24-401-039-SE1/4
15-24-401-040
\$ 15.00 MISCELLANEOUS RECORDING
\$ 2.00 REMUNERATION
27 NOV 95 5:00 P.M. RECEIPT# 67A
PAID RECORDED - OAKLAND COUNTY
LYNN D. ALLEN, CLERK/REGISTER OF DEEDS

198307101

assure that the remedy is protective of human health and the environment;

WHEREAS, LTV Steel Company, Inc. is subject to an Administrative Order For Remedial Design and Remedial Action in the matter of J&L Landfill, Operable Unit #1, Rochester Hills, Michigan, U.S. EPA ID #MID980609440, under Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. §9606(a) (the "Order"), which has been recorded with the Oakland County, Michigan, Recorder's Office at LIBER 15568, PG 130 - 264. The Statement of Work ("SOW") attached to the Order identifies institutional controls which are necessary to effectuate and protect the remedial action at the Property and to protect the public health and welfare and the environment at the Property;

NOW, THEREFORE, by this instrument there are created, declared and established for the Property the following restrictive covenants and requirements, which shall, unless amended, run with the land and remain in full force and effect in perpetuity from the date hereof, irrespective of any sale, conveyance, alienation, or other transfer of any interest or estate in such Property:

ARTICLE ONE - RESTRICTIONS APPLICABLE TO THE PROPERTY

The following restrictions shall apply to the Property described above:

1. There shall be no use of the groundwater underlying the Property other than that required for implementation of remedial actions required by U.S. EPA to be undertaken pursuant to such Records of Decision ("RODs") as U.S. EPA has issued or may issue and make applicable to the Property.

2. There shall be no use of the Property that will interfere with the Work performed or to be performed under the Order at the Property, or any activity which may damage any remedial action component constructed for or installed pursuant to the Order, or which will otherwise impair the effectiveness of any Work to be performed pursuant to the Order.
3. There shall be no installation, construction, removal, or use of any buildings, wells, pipes, roads, ditches or any other structures at the Property except as consistent with the Order and the SOW, or any subsequent orders, decrees, and Statements of Work pursuant to any subsequent ROD made applicable to the Property.
4. There shall be no residential use of the Property.

The restrictions specified above shall continue in full force and effect until the Property is deleted from the National Priorities List compiled by U.S. EPA pursuant to CERCLA Section 105, 42 U.S.C. §9605, until all remedial action cleanup and performance standards have been met, or until such time as the restrictions are modified or terminated as provided in Article Three below.

ARTICLE TWO - COPY OF RESTRICTIONS

A copy of these restrictions shall be provided by the owner of the Property to all respective successors, assigns and transferees of the Property.

ARTICLE THREE - MODIFICATION OR TERMINATION OF DEED RESTRICTIONS

After the Work, as defined in the Order and the SOW, has been completed, and upon achievement of Cleanup Standards consistent with the Order and the SOW, the owner(s) of the Property may modify or terminate the deed restrictions set forth in Article One, above. Any modification or termination must be

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consistent with the requirements set forth in the Order and the SOW, and shall not impair the effectiveness of any Work performed pursuant to the Order.

The owner(s) of the Property shall provide to LTV Steel Company, Inc., U.S. EPA, and the State of Michigan copies of any modification or termination of deed restriction. Any party may object to the proposed use of the Property on the grounds that such use is inconsistent with the terms of the Order or the SOW, or will impair the effectiveness of any Work performed pursuant to the Order. Any party so objecting shall notify the owner(s) of the Property, the U.S. EPA, and the State of Michigan, in writing, within thirty (30) days of receipt of the modification or termination of deed restrictions.

ARTICLE FOUR - SEVERABILITY

If any provision of this Declaration of Restrictions On Use of Real Property is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof. All such other provisions shall continue unimpaired and in full force and effect.

ARTICLE FIVE - CONFLICT OF LAWS

If any provision of this Declaration of Restrictions On Use of Real Property is also the subject of any law or regulation established by any federal, state or local government, the most restrictive of the two standards shall prevail.

ARTICLE SIX - HARMONIOUS CONSTRUCTION

No provision of this Declaration of Restrictions On Use of Real Property shall be construed so as to violate any applicable zoning laws, regulations or ordinances. If any such conflict does arise, the applicable zoning laws, regulations or ordinances shall prevail, unless they are inconsistent with the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §9601, et seq.

The undersigned person executing this Declaration of Restrictions On Use of Real Property on behalf of LTV Steel Company, Inc., the owner of the Property, represents and certifies that he is duly authorized and has been fully empowered to execute this Declaration.

IN WITNESS WHEREOF, LTV Steel Company, Inc., the owner of the Property, has cause this Declaration of Restrictions On Use of Real Property to be executed this 21st day of November, 1995.

LTV STEEL COMPANY, INC.

BY: J. Skonek
J. Skonek

WITNESSED:
Caleb E. Papajich
Caleb E. Papajich
Mark D. Karda
Mark D. Karda

Done 11/21/95
Deputy
John E. Skonek
President
John E. Skonek
11/21/95
11/21/95
11/21/95

The foregoing is a true and correct copy of the original as the same was signed and acknowledged by me this 21st day of November, 1995.
Katheryn E. Vandembroek
11/24/95
KATHERYN E. VANDENBROEK,
Notary Public, State of Ohio
My Commission Expires 11-4-96